

**AMENDMENTS TO THE CLAIMS**

1. (Canceled)

2. (Canceled)

3. (Withdrawn, Currently Amended) A method for producing ~~the epitaxial substrate for the compound semiconductor light-emitting device of claim 1,~~ an epitaxial substrate for a compound semiconductor light-emitting device comprising a double-hetero light-emitting layer structure including a pn junction; and a p-type layer side layer structure formed in contact with the light-emitting layer structure including in order from the layer in contact with the light-emitting layer structure an n-type first layer represented by  $\text{In}_x\text{Al}_y\text{Ga}_z\text{N}$  ( $x + y + z = 1$ ,  $0 \leq x \leq 1$ ,  $0 \leq y \leq 1$ ,  $0 \leq z \leq 1$ ), a p-type second layer represented by  $\text{In}_u\text{Al}_v\text{Ga}_w\text{N}$  ( $u + v + w = 1$ ,  $0 \leq u \leq 1$ ,  $0 \leq v \leq 1$ ,  $0 \leq w \leq 1$ ) and a p-type third layer represented by  $\text{In}_p\text{Al}_q\text{Ga}_r\text{N}$  ( $p + q + r = 1$ ,  $0 \leq p \leq 1$ ,  $0 \leq q \leq 1$ ,  $0 \leq r \leq 1$ ), each of the three neighbors being formed in contact with its neighbor, wherein comprising a growth temperature  $T_1$  of the first layer and a growth temperature  $T_2$  of the second layer are made to satisfy the satisfying a relationship  $T_1 \leq T_2$ .

4. (Withdrawn, Currently Amended) ~~[[A]]~~ The method for producing the epitaxial substrate for the compound semiconductor light-emitting device of ~~claim 2~~ claim 3, wherein a thickness  $d_1$  (Å) of the first layer is in the range of  $5 \leq d_1 \leq 200$  and a thickness  $d_2$  (Å) of the

second layer is in the range of  $5 \leq d_2 \leq 30,000$ , and a growth temperature  $T_1$  of the first layer and a growth temperature  $T_2$  of the second layer are made to satisfy the relationship  $T_1 \leq T_2$ .

5. (Withdrawn, Previously Presented) The method for producing the epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 3 or 4, wherein the second layer is grown to satisfy the relationships:

$$5 \leq d_2 \leq 30,000 \quad (900 \leq T_2 \leq 1,150)$$

$$T_2 \geq 0.4 d_2 + 700 \quad (700 \leq T_2 < 900),$$

where  $T_2$  ( $^{\circ}\text{C}$ ) is the growth temperature of the second layer and  $d_2$  ( $\text{\AA}$ ) is the thickness of the second layer.

6. (Withdrawn, Previously Presented) The method for producing the epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 3 or 4, wherein the second layer and the third layer are grown by a regrowth method after growth of the first layer.

7. (Withdrawn, Previously Presented) The method for producing the epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 5, wherein the second layer and the third layer are grown by a regrowth method after growth of the first layer.

8. (Canceled)

9. (Withdrawn) A light-emitting device utilizing the production method of claim 3.

10. (Currently Amended) An epitaxial substrate for a compound semiconductor light-emitting device comprising:

a double-hetero light-emitting layer structure including a pn junction; and

a p-type layer side layer structure formed in contact with the light-emitting layer structure including in order from the layer in contact with the light-emitting layer structure an n-type first layer represented by  $\text{In}_x\text{Al}_y\text{Ga}_z\text{N}$  ( $x + y + z = 1$ ,  $0 \leq x \leq 1$ ,  $0 \leq y \leq 1$ ,  $0 \leq z \leq 1$ ), an n-type second layer represented by  $\text{In}_u\text{Al}_v\text{Ga}_w\text{N}$  ( $u + v + w = 1$ ,  $0 \leq u \leq 1$ ,  $0 \leq v \leq 1$ ,  $0 \leq w \leq 1$ ) and a p-type third layer represented by  $\text{In}_p\text{Al}_q\text{Ga}_r\text{N}$  ( $p + q + r = 1$ ,  $0 \leq p \leq 1$ ,  $0 \leq q \leq 1$ ,  $0 \leq r \leq 1$ ), each of the three neighbors being formed in contact with its neighbor, wherein the n-type second layer has a p-type dopant.

11. (Previously Presented) The epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 10, wherein the p-type dopant density of the n-type second layer is not less than  $1 \times 10^{17} \text{ cm}^{-3}$  and not greater than  $1 \times 10^{21} \text{ cm}^{-3}$ , and the n-type carrier density of the n-type second layer is not greater than  $1 \times 10^{19} \text{ cm}^{-3}$ .

12. (Previously Presented) The epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 10, wherein a thickness  $d_1$  (Å) of the first layer is in the range of  $5 \leq d_1 \leq 200$  and a thickness  $d_2$  (Å) of the second layer is in the range of  $5 \leq d_2 \leq 500$ .

13. (Previously Presented) The epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 11, wherein a thickness  $d_1$  (Å) of the first layer is in the range of  $5 \leq d_1 \leq 200$  and a thickness  $d_2$  (Å) of the second layer is in the range of  $5 \leq d_2 \leq 500$ .

14. (Withdrawn, Previously Presented) A method for producing the epitaxial substrate for the compound semiconductor light-emitting device of claim 10, 11, 12 or 13, wherein a growth temperature  $T_1$  of the first layer and a growth temperature  $T_2$  of the second layer are made to satisfy the relationship  $T_1 \leq T_2$ .

15. (Withdrawn, Previously Presented) The method for producing the epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 14, wherein the second layer is grown to satisfy the relationships:

$$T_2 \geq 0.4 d_2 + 700 \quad (5 \leq d_2 \leq 500)$$

$$1,150 \geq T_2 \geq 700,$$

where  $T_2$  (°C) is the growth temperature of the second layer and  $d_2$  (Å) is the thickness of the second layer.

16. (Withdrawn, Previously Presented) The method for producing the epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 14, wherein the second layer and the third layer are grown by a regrowth method after growth of the first layer.

17. (Withdrawn, Previously Presented) The method for producing the epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 15, wherein the second layer and the third layer are grown by a regrowth method after growth of the first layer.

18. (Previously Presented) A light-emitting device utilizing the epitaxial substrate for the compound semiconductor light-emitting device of claim 10, 11, 12 or claim 13, and an electrode.

19. (Withdrawn) A light-emitting device utilizing the production method of claim 14, 15, 16 or claim 17.

20-21. (Canceled)

22. (New) The epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 10, wherein the Al content  $v$  of the n-type second layer is in a range of about 0.001 to 0.3.

23. (New) The epitaxial substrate for the compound semiconductor light-emitting device as claimed in claim 12, wherein the second layer has been grown at a temperature  $T_2$  in  $^{\circ}\text{C}$  as a function of the thickness  $d_2$  according to  $T_2 \geq 0.4 d_2 + 700$  and  $1,150 \geq T_2 \geq 700$ .